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Applicant : Douglas T. Dieterich

Serial No. : 09/862,404

Filed : May 21, 2001

For : **METHOD OF TREATING ANEMIA CAUSED BY RIBAVIRIN
TREATMENT OF HEPATITIS C USING ERYTHROPOIETIN
ALPHA**

Group Art Unit : 1646

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INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

The Examiner's attention is respectfully invited to the following documents which are also listed on the accompanying Form PTO-1449, enclosed in duplicate.

U.S. PATENTS

1. U.S. Patent No. 6,172,046 B1, Issued: January 9, 2001 to Albrecht,
2. U.S. Patent No. 5,610,054, Issued: March 11, 1997 to Draper,
3. U.S. Patent No. 5,869,253, Issued: February 9, 1999 to Draper,
4. U.S. Patent No. 6,132,966, Issued: October 17, 2000 to Draper,
5. U.S. Patent No. 5,399,551, Issued: March 21, 1995 to Ise et al.,
6. U.S. Patent No. 5,604,198, Issued: February 18, 1997 to Poduslo et al.,
7. U.S. Patent No. 5,670,477, Issued: September 23, 1997 to Poduslo et al.,
8. U.S. Patent No. 5,661,125, Issued: August 26, 1997 to Strickland,
9. U.S. Patent No. 6,063,772, Issued: May 16, 2000 to Tam,
10. U.S. Patent No. 5,543,390, Issued: August 6, 1996 to Yatvin et al.,
11. U.S. Patent No. 5,543,391, Issued: August 6, 1996 to Yatvin et al.

OTHER REFERENCES

1. Abels RI, Larholt KM, Krantz KD, et al., "Recombinant Human Erythropoietin (rHuEPO) for the Treatment of the Anemia of Cancer," *The Oncologist*, 1996, Vol. 1, pp. 140-50.
2. Alter MJ, Kruszon-Moran D, Nainan OV, et al., "The Prevalence of Hepatitis C Virus Infection in the United States, 1988 Through 1994," *New England Journal of Medicine*, 1999, Vol. 341, pp. 556-62.
3. Alter MJ, Mast EE, Moyer LA, et al., "Hepatitis C," *Infectious Disease Clinics of North America*, 1998, Vol. 12, pp. 13-26

4. Baer AN, Dessypris EN, Goldwasser E, et al., "Blunted Erythropoietin Response to Anaemia in Rheumatoid Arthritis," *British Journal of Haematology*, 1987, Vol. 66, pp. 559-64.
5. Beguin Y, "Erythropoietin and the Anemia of Cancer," *Acta Clinica Belgica* 1996, Vol. 51, pp. 36-52.
6. Causse X, Godinot H, Chevallier M, et al., "Comparison of 1 or 3 MU of Interferon Alfa-2b and Placebo in Patients with Chronic Non-A, Non-B Hepatitis," *Gastroenterology*, 1991, Vol. 101, pp. 497-502.
7. Cazzola M, Mercuriali F, Brugnara C, "Use of Recombinant Human Erythropoietin Outside the Setting of Uremia," *Blood*, 1997, Vo. 89, pp. 4248-67.
8. Davis GL, Balart LA, Schiff ER, et al., "Treatment of Chronic Hepatitis C with Recombinant Interferon Alfa: A Multicenter Randomized, Controlled Trial," *New England Journal of Medicine*, 1989, Vol. 321, pp. 1501-6.
9. Dawson-Saunders B, Trapp RG, *Basic and Clinical Biostatistics*, Appleton & Lange, Norwalk, CT, 1990.*
10. Di Bisceglie AM, Martin P, Kassianides C, et al., "Recombinant Interferon Alfa Therapy for Chronic Hepatitis C: A Randomized, Double-Blind, Placebo-Controlled Trial," *New England Journal of Medicine*, 1989, Vol. 321, pp. 1506-10.
11. Elghetany MT, Davey FR, "Erythrocytic Disorders," *Clinical Diagnosis and Management by Laboratory Methods*, 19th Ed. (Henry JB, ed.), WB Saunders Company, Philadelphia, 1996, pp. 617-63.

* Due to its voluminous nature, entire reference will be made available upon request.

12. Fisher JW, "Erythropoietin: Physiologic and Pharmacologic Aspects," *Proceeding of the Society for Experimental Biology and Medicine*, 1997, Vol. 216, pp. 358-69.
13. Gogu SR, Beckman BS, Wilson RB, et al., "Inhibitory Effects of Zidovudine in Erythroid Progenitor Cells: Reversal with a Combination of Erythropoietin and Interleukin-3," *Biochemical Pharmacology*, 1995, Vol. 50, pp. 413-9.
14. Goodnough LT, Anderson KC, Kurtz S, et al., "Indications and Guidelines for the Use of Hematopoietic Growth Factors," *Transfusion*, 1993, Vol. 33, pp. 944-59.
15. Harbol AW, Liesveld JL, Simpson-Haidaris PJ, et al., "Mechanisms of Cytopenia in Human Immunodeficiency Virus Infection," *Blood Reviews*, 1994, Vol. 8, pp. 241-51.
16. Jelkmann WB, Fandrey J, Frede S, et al., "Inhibition of Erythropoietin Production by Cytokines: Implications for the Anemia Involved in Inflammatory States," *Annals of the New York Academy of Sciences*, 1994, Vol. 718, pp. 300-9.
17. Jen F, Glue P, Gupta S, et al., "Population Pharmacokinetic and Pharmacodynamic Analysis of Ribavirin in Patients with Chronic Hepatitis C," *Therapeutic Drug Monitoring*, Vol. 22, No. 3, 2000.
18. Koziel MJ, "Cytokines in Viral Hepatitis," *Seminars in Liver Disease*, 1999, Vol. 19, pp. 157-69.
19. Krantz SB, "Erythropoietin," *Blood*, 1991, Vol. 77, pp. 419-34.
20. Kuehl AK, Noormohamed SE, "Recombinant Erythropoietin for Zidovudine-Induced Anemia in AIDS," *Annals of Pharmacotherapy*, 1995, Vol. 29, pp. 778-9.
21. Lai CM, Swaminathan N, Beilharz MW, et al., "Interferon- α Inhibits Erythropoietin-Induced Proliferation, but Not Differentiation, and Restricts Erythroleukemia Development," *Journal of Interferon & Cytokine Research*, 1995, Vol. 15, pp. 669-75.

22. MacDougall DS, "Recombinant Human Erythropoietin for HIV-Related Anemia," *Journal of the Int'l Association of Physicians in AIDS Care*, Oct. 1998, pp. 18-24.
23. Marcellin P, Boyer N, Giostra E, et al., "Recombinant Human α -Interferon in Patients With Chronic Non-A, Non-B Hepatitis: A Multicenter Randomized Controlled Trial from France." *Hepatology*, 1991, Vol. 13, pp. 393-7.
24. McHutchison JG, Gordon SC, Schiff ER, et al., "Interferon α -2b Alone or in Combination With Ribavirin as Initial Treatment for Chronic Hepatitis C," *New England Journal of Medicine*, 1998, Vol. 339, pp. 1485-92.
25. Means RT, Jr., "Advances in the Anemia of Chronic Disease," *Int'l Journal of Hematology*, 1999, Vol. 70, pp. 7-12.
26. Means RT, Jr., "Pathogenesis of the Anemia of Chronic Disease: A Cytokine-Mediated Anemia," *Stem Cells*, 1995, Vol. 13, pp. 32-7.
27. Means RT, Jr., Krantz SB, "Progress in Understanding the Pathogenesis of the Anemia of Chronic Disease," *Blood*, 1992, Vol. 80, pp. 1639-47.
28. Moore RD, Keruly JC, Chaisson RE, "Anemia and Survival in HIV Infection." *Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology*, 1998, Vol. 19, pp. 29-33.
29. Musto P, Falcone A, D'Arena G, et al., "Clinical Results of Recombinant Erythropoietin in Transfusion-Dependent Patients With Refractory Multiple Myeloma: Role of Cytokines and Monitoring of Erythropoiesis," *European Journal of Haematology*, 1997, Vol. 58, pp. 314-9.

30. Napoli J, Bishop GA, McGuinness PH, et al., "Progressive Liver Injury in Chronic Hepatitis C Infection Correlates with Increased Intrahepatic Expression of Th1-Associated Cytokines," *Hepatology*, 1996, Vol. 24, pp. 759-65.
31. Peeters HM, Jongen-Lavrencic M, Vreugdenhil G, et al., "Effect of Recombinant Human Erythropoietin on Anemia and Disease Activity in Patients with Rheumatoid Arthritis and Anaemia of Chronic Disease: A Randomised Placebo Controlled Double Blind 52 Weeks Clinical Trial," *Annals of the Rheumatic Diseases*, 1996, Vol. 55, pp. 739-44.
32. Poynard T, Marcellin P, Lee SS, et al., "Randomised Trial of Interferon $\alpha 2b$ Plus Ribavirin for 48 Weeks or For 24 Weeks Versus Interferon $\alpha 2b$ Plus Placebo for 48 Weeks for Treatment of Chronic Infection With Hepatitis C Virus," *Lancet*, 1998, Vol. 352, pp. 1426-32.
33. Reichard O, Norkrans G, Fryden A, et al., "Randomized, Double-Blind, Placebo-Controlled Trial of Interferon α -2b With and Without Ribavirin for Chronic Hepatitis C," *Lancet*, 1998, Vol. 351, pp. 83-7.
34. Reichard O, Schvarcz R, Weiland O., "Therapy of Hepatitis C: Alpha Interferon and Ribavirin," *Hepatology*, 1997, Vol. 26 (Supp. 1), pp. 108S-11S.
35. Spivak JL, Barnes DC, Fuchs E, et al., "Serum Immunoreactive Erythropoietin in HIV-Infected Patients," *Journal of the American Medical Association*, 1989, Vol. 261, pp. 3104-7.
36. Thomas HC, Booth J, Brown J., "Pathophysiology and Treatment of Hepatitis C," *Drugs*, 1996, Vol. 52 (Supp. 2), pp. 1-8.
37. Weisz K, Goldman D, Talal A, et al., "Interferon (IFN) and Ribavirin (RBV) Therapy for Hepatitis C (HCV) in HIV-Coinfected Patients, 12 Month Follow-Up," 7th Conference on Retroviruses and Opportunistic Infections, Jan. 30-Feb. 2, 2000, Abstract 283.

38. "Management of Hepatitis C Consensus Development Statement," National Institutes of Health, Mar. 24-26, 1997.

39. "Rebetron Product Label," *Physician's Desk Reference*, 53rd Ed., Medical Economics Company, Montvale, NJ, 1999.

Pursuant to Rule 37 C.F.R. §1.97(b)(3), an Information Disclosure Statement shall be considered by the Patent Office filed before the issuance of the first Office Action on the merits.

This Information Disclosure Statement is not a representation that the documents cited herein are considered most pertinent, or that a search has been undertaken, or that any of the cited documents are indeed prior art. The Examiner is invited to undertake an independent search. Applicant asserts that the claimed invention is patentable over these documents.

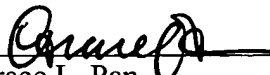
Applicant respectfully requests that the Examiner consider and make of record the documents cited herein and that a copy of Form PTO-1449, appropriately initialed by the Examiner, be returned to Applicant's attorney.

It is believed no fee is due, however, the Examiner is authorized to charge any deficit or credit any overpayment to Deposit Account No. 50-0320.

Respectfully submitted,

FROMMER LAWRENCE & HAUG LLP
Attorneys for Applicant

By:



Grace L. Pan
Registration No. 39,440
745 Fifth Avenue
New York, New York 10151
(212) 588-0800